

**In the Claims:**

Claims 1-17 (Cancelled)

18. (Original<sup>1</sup>) A photolytic cell comprising:  
a transparent window;  
an anode conductor layer adjacent to said transparent window;  
a light-activated catalyst disposed upon said anode conductor layer;  
a cathode connected to said anode; and  
a ~~cathode~~ catholyte bordering said cathode.
19. (Original) The photolytic cell of claim 18, wherein said light-activated catalyst is a metal oxide catalyst.
20. (Currently amended) The photolytic cell of claim ~~18~~ 19, wherein said metal oxide catalyst is TiO<sub>2</sub> anatase.
21. (Original) The photolytic cell of claim 18, wherein said cell further comprises a second catalyst disposed on said light-activated catalyst.
22. (Currently amended) ~~The photolytic cell of claim 21,~~ A photolytic cell comprising;  
a transparent window;  
an anode conductor layer adjacent to said transparent window;  
a light-activated catalyst disposed upon said anode conductor layer;  
a cathode connected to said anode;  
a catholyte bordering said cathode; and  
a second catalyst disposed on said light-activated catalyst;  
wherein said second catalyst includes MnO<sub>2</sub>.

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<sup>1</sup> Although claim 18 is shown as amended, the amendment merely corrects a typographical error appearing in Applicant's response filed on September 3, 2003. In that response, claim 18 was presented (without amendment) as reciting "a cathode bordering said cathode" in the last line of that claim. That recitation in claim 18 should be, and has always been, "a catholyte bordering said cathode." Thus, the amendment to claim 18 presented herein merely corrects that claim to its prior form, as originally filed. Accordingly, Applicant retains the designation of "(Original)."

23. (Cancelled)

24. (Currently amended) ~~The photolytic catalyst of claim 18, wherein said photolytic cell further comprises~~ A photolytic cell comprising;

a transparent window;

an anode conductor layer adjacent to said transparent window;

a light-activated catalyst disposed upon said anode conductor layer;

a cathode connected to said anode;

a catholyte bordering said cathode; and

a cation exchange membrane abutting said catholyte.

25. (Original) The photolytic cell of claim 18, wherein said photolytic cell converts water into oxygen.

26. (Original) The photolytic cell of claim 18, wherein said light-activated catalyst converts water into active oxygen.

27. (Original) The photolytic cell of claim 21, wherein said second catalyst converts active oxygen to dissolved oxygen.

28. (Original) The photolytic cell of claim 18, wherein electrons flow from said anode to said cathode.

29. (New) A photolytic cell comprising:  
a thin film or fiber transparent light conduit;  
a substantially optically transparent electrical conducting film disposed adjacent to said transparent light conduit;  
a light activated catalyst layer disposed upon said electrical conducting film;  
an optically opaque anodic catalyst layer disposed upon said light activated catalyst layer, wherein said light activated catalyst is capable of producing hydrogen ions, electrons and oxygen;

an electrolyte flowing in contact with said anodic catalyst to accept the oxygen and hydrogen ions produced, and to supply by water molecules for their production;

an electrically conductive circuit to accept the electrons produced to conduct them to a cathode;

a membrane to transport cations from the electrolyte to a second electrolyte; and,

a cathode to accept the electrons.

30. (New) The photolytic cell of claim 29, wherein said photolytic cell converts water into oxygen.

31. (New) The photolytic cell of claim 26, wherein said light-activated catalyst converts water into active oxygen.